REMARKS

Claims 9-15, 24-30 and 37-43 were previously withdrawn from consideration. Claims 33 and 34 are cancelled. As a result, claims 1-8, 16-23, 31, 32, 35, 36 and 44-56 are presently at issue in the application. Of these, claims 1, 16 and 31 are independent claims. Reconsideration is respectfully requested in view of the remarks below.

Claims 1, 16, and 31 are amended to more clearly recite that process control information is different from secondary information and that both the process control information and the secondary information is communicated between a controller and a field device via a wireless link disposed directly between the controller and the field device. Each of claims 1, 16, and 31 is further amended to recite that a field device controls a physical process parameter based on process control information (such as a control signal transmitted by a computer system controller and received by the field device) or measures a physical process control parameter to determine process control information received by the computer system controller from the field device.

It is known in the art that a field device operates under the control of a process controller by receiving one or more process control signals from the controller and/or by providing one or more measurement signals of physical parameters associated with a process to the controller, to thereby communicate information about or to effect a change in a physical parameter of the process. A process controller itself (such as those disclosed in the present application) is generally not a field device because it does not act upon a physical process variable nor does it measure a physical process variable within the process. Similarly, a field device (such as those disclosed in the application) is not a process controller because such a field device does not produce a control signal, but merely receives a control signal from a process controller and implements the control signal. Thus, while some types of field devices, such as smart field devices, include processors for managing the implementation of a control signal that is received from and produced by a process controller, a field device is not a controller when it does not itself produce a control signal.

As disclosed in the specification, a field device may be capable of providing or receiving secondary information in addition to process control information. Generally, process control information includes (1) process control signals produced by a controller to change a physical parameter or (2) measurement signals of physical parameters associated with a process under the control of a process controller. Secondary information includes information other than process control information. As discussed in the present application, secondary information may include diagnostic information (including sensor diagnostics, device diagnostics, wiring diagnostics, and process diagnostics), operating temperatures, calibration information, device ID numbers, error codes, materials of construction, programming information etc. When the field device is a device operating to communicate with a process controller using a standard communication protocol, secondary information can also be information that is not defined by the communication protocol. For example, when the process control system implements a Fieldbus protocol, secondary information may include information relating to functions not specified in the Fieldbus specification. Applicants note that the claimed method and system provides, over a wireless communication link disposed between a process controller and a field device, both process control information (e.g., process control signals or measurements signals) and secondary information (i.e., information other than process control information).

Applicants respectfully traverse the rejection of claims 1-8, 16-23, 31, 32, 35, 36 and 44-56 as obvious over McCain et al. (U.S. Patent No. 6,129,449) in view of Eidson et al. (U.S. Patent No. 5,586,305). Each of the pending claims recites communicating both process control information and secondary information (different from the process control information) via a wireless link disposed directly between a controller or control system and a field device, wherein the field device controls a physical process parameter based on process control information (e.g., a control signal transmitted by the computer system controller and received by the field device) or measures a physical process control parameter to determine the process control information received by the computer system controller from the field device. Neither McCain et al. nor Eidson et al. discloses a wireless communication link disposed between a controller and a field device that communicates both process control information (e.g., used to control a physical process parameter) and secondary information (non-process control information) between the controller and the field device. Therefore, no

combination of McCain et al. and Eidson et al. renders any of pending claims 1-8, 16-23, 31, 32, 35, 36 and 44-56 obvious.

In particular, McCain et al. discloses wireless links connecting three components: a process controller 62, handheld devices 60 and 61, and a local computer 53. However, none of the three components of McCain et al. is a field device as recited by the pending claims. Applicants have amended the claims to prevent reading any of the process controller 62, handheld devices 60 and 61, or local computer 53 as a field device. In particular, none of the three components control a physical process parameter based on process control information (such as a control signal) nor do the handheld devices 60 and 61 measure a physical process control parameter to provide process control information to a controller, as recited by the pending claims. Because none of the three components that use a wireless link in McCain et al. is a field device, no communication between the three components is a communication between a controller and a field device, as recited by the pending claims.

Moreover, no other component of the McCain et al. system provides and/or receives both process control information (including a control signal) and secondary information to/from a field device, much less provides both process control information and secondary information to a field device over a wireless link. In fact, the only disclosure in McCain et al. of a field device, as recited by the pending claims, is the factory equipment 16 which appears to operate under the control of a controller. Other than factory equipment 16, McCain et al. contains no disclosure of a field device that controls a physical process parameter based on process control information (including a control signal) or that measures a physical process control parameter to provide process control information to a controller. Accordingly, while McCain et al. discloses wirelessly exchanging information between components such as controllers (e.g., controller 62), hand held display devices (i.e., 60 and 61), and host computers (e.g., computer 53), McCain et al. does not disclose wirelessly communicating process control information and secondary information between a controller and a field device nor does McCain et al. disclose a wireless link between a controller and a field device.

While Eidson et al. discloses sending process control information over a wireless link as part of a field device, Eidson et al. also does not disclose sending process control information and secondary information to a field device nor does Eidson et al. disclose a wireless link disposed directly between a controller and a field device. Generally, Eidson et al. discloses a process control system including a plurality of definable nodes connected to each other by a communication means. Each definable node may be configured to be one of a sensor, actuator, or system node. Eidson et al. discloses that the system node may implement a control function. Each node of Eidson et al. is designed to specify the type of transducer (e.g., actuator or sensor, if any) that is coupled to the node and to translate information produced by the transducer for transmission on the communication bus. A node of Eidson et al. implementing a transducer function includes a core module 18, a communication module 22, and a transducer module 20. A transducer 21, being an actuator or a sensor, is coupled to the node core module 18 via the transducer module 20. The transducer module 20 can be used to provide the node core module 18 characteristic data on the transducer 21 so that the node core module 18 can correctly interface and communicate with the transducer 21. The node core module 18 may then transform signals received from the transducer 21 via transducer module 20 into the appropriate format for transmission across a communication means to, for example, a controller. Each node of Eidson et al. can receive process control signals (e.g., from a controller) which the node may then transform or translate into an appropriate signal for transmission to transducer 21 (e.g., an actuator). Similarly, an Eidson et al. node may receive a measurement signal from its transducer sensor via the transducer module 20 and adapt the message for transmission on the communication means to a controller. In this manner, the Eidson et al. system enables various types of transducers 21 to be plugged into or removed from its system without having to modify existing components of its system. Additionally, Eidson et al. discloses that the transducer 21 (being an actuator or a sensor) may be disposed remotely from the node core via a wireless link.

Importantly, while Eidson et al. discloses a wireless link between a transducer and a transducer module and between a transducer module and a core module of the transducer module, this wireless link is not disposed directly between a controller and a field device that transmits and receives both process control information produced by the

controller (the control signal) and secondary information between the field device and the controller, as recited by the pending claims. In particular, the office action cites the wireless communication link between the transducer 21 and transducer module 20 of the Eidson et al. system for disclosing the claimed wireless link. However, the communication between the transducer 21 and transducer module 20 is limited to process information such as a control signal to the transducer or a measurement signal from the transducer. Eidson et al. is silent regarding any secondary information being sent to the transducer nor does Eidson et al. teach that the actuator or sensor serving as a transducer can provide any processing functionality to enable it to provide secondary information. Thus, the wireless communication link between the transducer module 20 and transducer 21 of Eidson et al. cannot be the claimed communication link.

Moreover, when a node of Eidson et al. is defined to include a transducer (e.g., an actuator or a sensor), none of the transducer, the transducer module, or the core module of the transducer module, or any combination thereof, is the claimed controller because none of these elements produces a control signal for a field device. While the transducer module may implement a control signal for the transducer, the transducer module does not produce a control signal in any manner. The core module of the transducer is also not a controller that produces a control signal for transmission to a field device via a wireless link. Instead, the core module merely receives control signals from a controller via a communication means 14 for implementation by the transducer 21 via the transducer module 20 or the core module transforms a measurement signal from the transducer module for transmission to a controller. This operation is specifically discussed in Eidson et al. at Col. 5, lines 17-19:

More specifically, when the transducer module 20 specifies and implements an actuator function, the CCM 18 implements an actuating signal and directs the transducing element 21 via the transducer module 20 to produce a corresponding physical result. When the transducer module 20 specifies and implements a sensing function, the transducing element 21 measures a single physical variable at times defined by the behavioral models specified in the CCM. The CCM transforms the resulting sensing signal into a correctly calibrated network message that can be transmitted to the network by the communication module 22 according to the selected behavioral model. Col. 5, lines 17-19. Neither of these signals is the claimed secondary information.

It should also be noted that while a node of Eidson et al. may implement a control function to produce a control signal, the control signal produced by a node is disclosed to be transmitted to a second and different node than the node that produced the control signal, where the control signal is implemented by the second node. Eidson et al. does not disclose that a node that produces a control signal can implement its own control signal using a transducer module of the node, in any manner. Thus, the core module of Eidson et al. is not a controller that produces process a control signal that is transmitted via a wireless link to a field device, as recited by the pending claims.

Furthermore, if a first node of Eidson et al. that produces a control signal is considered the claimed controller and a transducer module/transducer of a second node of Eidson et al. is considered the claimed field device, Eidson et al. still fails to disclose a wireless communication link disposed directly between a process controller and a field device that transmits and/or receives both (1) process control information, e.g., a control signal produced by the controller, and (2) secondary information sent between the process controller and the field device. In particular, while the first node of Eidson et al. may produce a control signal for implementation by the second node, or any component thereof, Eidson et al. does not disclose transmitting or receiving secondary information between a first node and a second node, in any manner. As discussed above, Eidson et al. discloses that configuration information or characteristic information may be provided by the transducer module to the core module of its transducer module to enable the core module to interface with a transducer. However, communication of this configuration information or characteristic information terminates at the core module. In fact, Eidson et al. actually teaches away from communicating configuration or characteristic information of a transducer module between a first and a second node. Specifically, Eidson et al. teaches a system in which each node can be removed or replaced without the need to modify or change other flexible nodes in its system. Requiring a first node to manage configuration or characteristic information of a second node would require the need to maintain or update that information, which is opposite of Eidson et al. Because no secondary information is communicated between nodes, the wireless link between the transducer module 20 and the core module 18 does not transmit or receive secondary information from a first node to a transducer module 20 of a second node.

It follows therefore, that the wireless link between the transducer module of Eidson et al. and a core module of Eidson et al. is not the recited wireless communication link.

Because neither McCain et al. nor Eidson et al. discloses a wireless communication link disposed between a controller and a field device that transmits and receives both process control information (e.g., a process control signal or a measurement signal) and secondary information (non-process control information) between the controller and the field device, no combination of McCain et al. and Eidson et al. renders any of pending claims 1-8, 16-23, 31, 32, 35, 36 and 44-56 obvious.

CONCLUSION

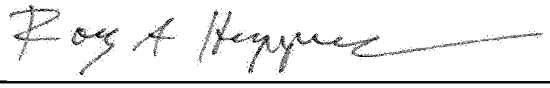
For the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the rejections and allowance of claims 1-8, 16-23, 31, 32, 35, 36 and 44-56.

This response is filed with a petition for a two-month extension of time and a Request for Continued Examination, along with the payment of the requisite fees therefor. While no other fees are believed to be due with this response, the Commissioner is authorized to charge any fee deficiency or credit any overpayment to Deposit Account No. 13-2855.

If there are matters that can be discussed by telephone to further the prosecution of this application, Applicants respectfully request that the Examiner call its attorney at the number listed below.

Dated: June 10, 2008

Respectfully submitted,

By 

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